

WHAT IS CLAIMED IS:

1. A 5,10,15,20-tetrapyridyl-21H,23H-
porphyrinato-zinc compound having a crystal form
selected from the group consisting of (a), (b) and (c)
5 shown below:

(a) a crystal form characterized by peaks at
Bragg angles ($2\theta \pm 0.2$ deg.) of 9.4 deg., 14.2 deg. and
22.2 deg.,

(b) a crystal form characterized by peaks at
10 Bragg angles ($2\theta \pm 0.2$ deg.) of 7.0 deg., 10.5 deg. and
22.4 deg., and

(c) a crystal form characterized by peaks at
Bragg angles ($2\theta \pm 0.2$ deg.) of 7.4 deg., 10.2 deg and
18.3 deg.,
15 respectively in $\text{CuK}\alpha$ -characteristic X-ray diffraction
patterns.

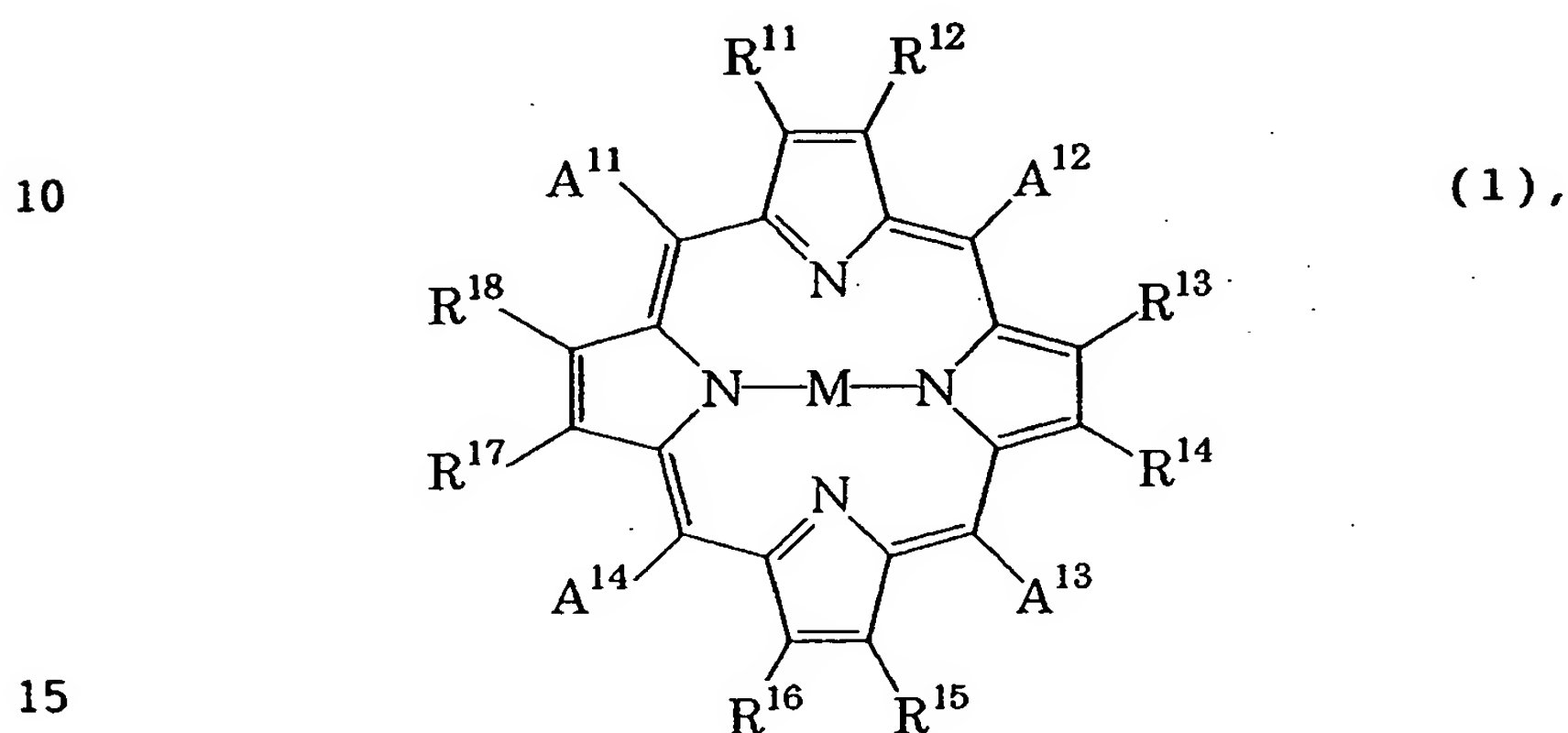
2. A 5,10,15-20-tetrapyridyl-21H,23H-
porphyrinato-zinc compound having the crystal form
20 (a).

3. A 5,10,15-20-tetrapyridyl-21H,23H-
porphyrinato-zinc compound having the crystal form
(b).

25 4. A 5,10,15-20-tetrapyridyl-21H,23H-
porphyrinato-zinc compound having the crystal form

(c).

5. An electrophotographic photosensitive member,
comprising a support and a photosensitive layer
disposed on the support, wherein the photosensitive
layer contains a porphyrin compound having a structure
represented by formula (1) shown below:



wherein M denotes a hydrogen atom or a metal capable
of having an axial ligand; R^{11} and R^{18} independently
denote a hydrogen atom, an alkyl group capable of
having a substituent, an aromatic ring capable of
having a substituent, an amino group capable of having
a substituent, a sulfur atom capable of having a
substituent, an alkoxy group, a halogen atom, a nitro
group or a cyano group; and A^{11} to A^{14} independently
denote a hydrogen atom, an alkyl group capable of
having a substituent, an aromatic ring capable of
having a substituent or a heterocyclic ring capable of

having a substituent with the proviso that at least one of A^{11} to A^{14} is a heterocyclic group capable of having a substituent.

5 6. A photosensitive member according to Claim 5, wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrin compound represented by the formula (1) wherein each of A^{11} to A^{14} is a pyridyl group.

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 7. A photosensitive member according to Claim 6, wherein the 5,10,15,20-tetrapyridyl)-21H,23H-porphyrin compound has a crystal form characterized by a Bragg angle (2θ) in a range of 20.0 ± 1.0 deg. in a $\text{CuK}\alpha$ -
15 characteristic X-ray diffraction pattern.

 8. A photosensitive member according to Claim 7, wherein the 5,10,15,20-tetrapyridyl)-21H,23H-porphyrin compound has a crystal form characterized by peaks at
20 Bragg angles ($2\theta \pm 0.2$ deg.) of 8.2 deg., 19.7 deg., 20.8 deg. and 25.9 deg.

 9. A photosensitive member according to Claim 6, wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compound.
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 10. A photosensitive member according to Claim 9,

wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having a crystal form selected from the group consisting of (a), (b), (c) and (d) shown below:

5 (a) a crystal form characterized by peaks at Bragg angles ($2\theta \pm 0.2$ deg.) of 9.4 deg., 142 deg. and 22.2 deg.,

(b) a crystal form characterized by peaks at Bragg angles ($2\theta \pm 0.2$ deg.) of 7.0 deg., 10.5 deg. and
10 22.4 deg.,

(c) a crystal form characterized by peaks at Bragg angles ($2\theta \pm 0.2$ deg.) of 7.4 deg., 10.2 deg and 18.3 deg., and

(d) a crystal form characterized by peaks at
15 Bragg angles ($2\theta \pm 0.2$ deg.) of 9.1 deg., 10.6 deg., 11.2 deg. and 14.5 deg., respectively in $\text{CuK}\alpha$ -characteristic X-ray diffraction patterns.

11. A photosensitive member according to Claim
20 10, wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having the crystal form (a).

12. A photosensitive member according to Claim
25 10, wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having the crystal form (b).

13. A photosensitive member according to Claim 10, wherein the porphyrin compound is a 5,10,15,20-tetrapyrrolyl-21H,23H-porphyrinato-zinc compound having
5 the crystal form (c).

14. A photosensitive member according to Claim 10, wherein the porphyrin compound is a 5,10,15,20-tetrapyrrolyl-21H,23H-porphyrinato-zinc compound having
10 the crystal form (d).

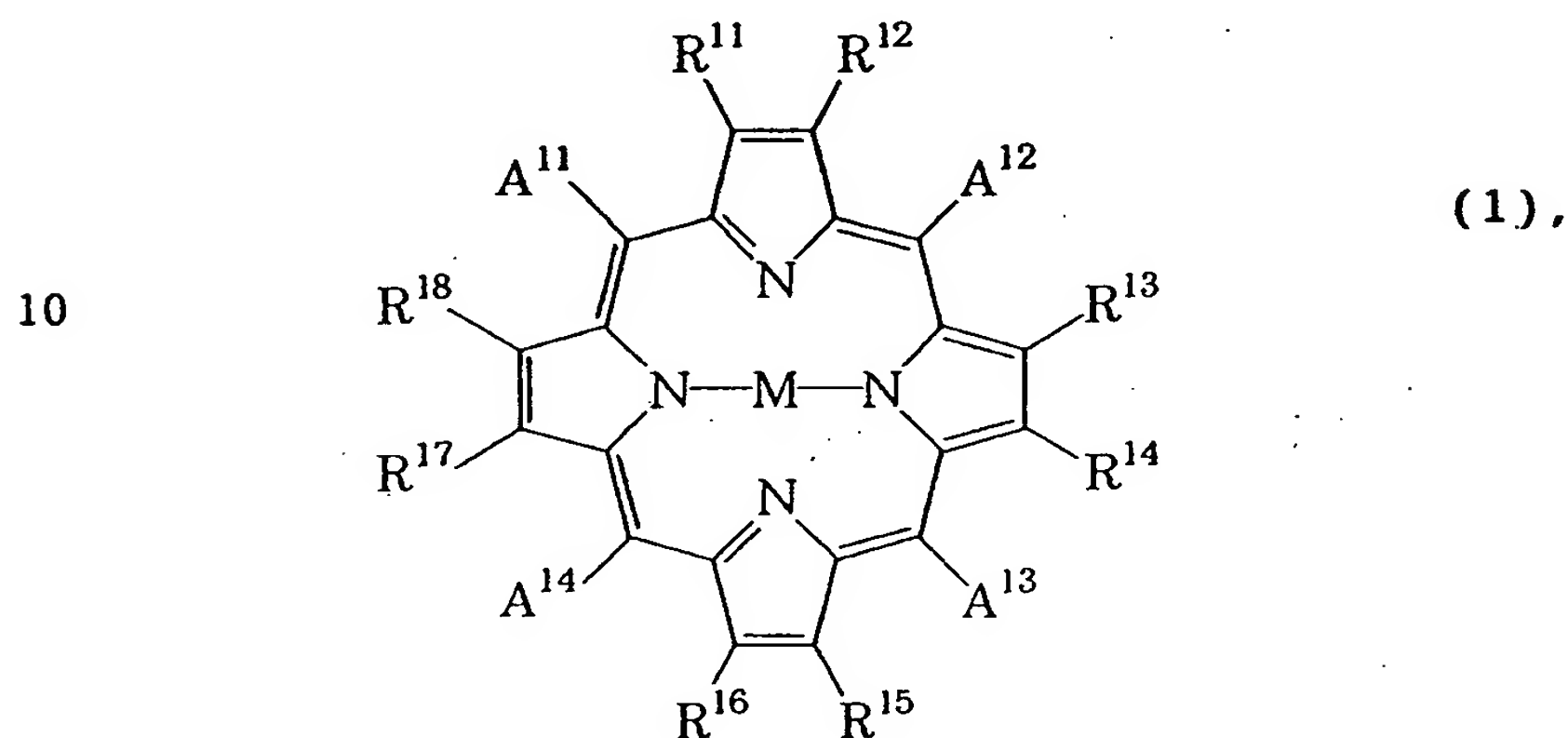
15. A photosensitive member according to Claim 5, adapted to be exposed to a laser light having a wavelength in a range of 380 - 500 nm issued from a
15 semiconductor laser for latent image formation.

16. A photosensitive member according to Claim 5, adapted to be exposed to a laser light having a wavelength in a range of 400 - 450 nm issued from a
20 semiconductor laser for latent image formation.

17. A process-cartridge, comprising an electrophotographic photosensitive member comprising a photosensitive layer disposed on a support, and at
25 least one means selected from the group consisting of a charging means, a developing means and a cleaning means and integrally supported together with the

electrophotographic photosensitive member to form a unit, which is detachably mountable to an electrophotographic apparatus,

wherein the photosensitive layer contains a
5 prophrin compound having a structure represented by formula (1) shown below:



15 wherein M denotes a hydrogen atom or a metal capable of having an axial ligand; R^{11} and R^{18} independently denote a hydrogen atom, an alkyl group capable of having a substituent, an aromatic ring capable of
20 having a substituent, an amino group capable of having a substituent, a sulfur atom capable of having a substituent, an alkoxy group, a halogen atom, a nitro group or a cyano group; and A^{11} to A^{14} independently denote a hydrogen atom, an alkyl group capable of
25 having a substituent, an aromatic ring capable of having a substituent or a heterocyclic ring capable of having a substituent with the proviso that at least

one of A¹¹ to A¹⁴ is a heterocyclic group capable of having a substituent.

18. A process-cartridge according to Claim 17,
5 wherein the electrophotographic apparatus includes a semiconductor laser having an oscillation wavelength in a range of 380 - 500 nm as an exposure means, and the photosensitive member is adapted to be exposed to a laser light from the semiconductor laser for latent
10 image formation.

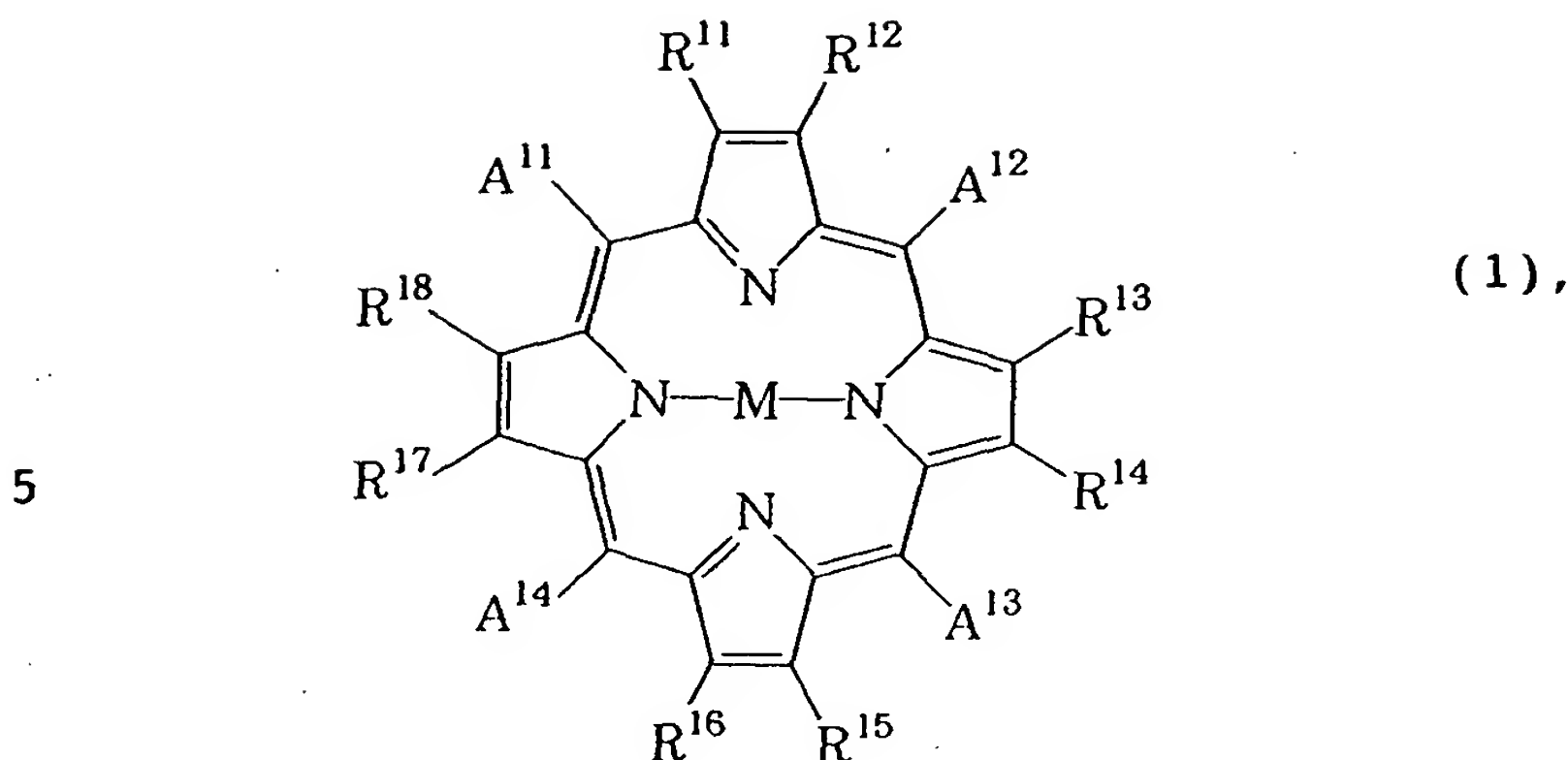
19. A process-cartridge according to Claim 18,
wherein the semiconductor laser has an oscillation wavelength in a range of 400 - 450 nm.

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20. An electrophotographic apparatus, comprising:
an electrophotographic photosensitive member
comprising a photosensitive layer disposed on a support, a charging means, an exposure means, a
20 developing means and a transfer means,

wherein the photosensitive layer contains a porphyrin compound having a structure represented by formula (1) shown below:

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10 wherein M denotes a hydrogen atom or a metal capable of having an axial ligand; R^{11} and R^{18} independently denote a hydrogen atom, an alkyl group capable of having a substituent, an aromatic ring capable of having a substituent, an amino group capable of having a substituent, a sulfur atom capable of having a substituent, an alkoxy group, a halogen atom,

15 a nitro group or a cyano group; and A^{11} to A^{14} independently denote a hydrogen atom, an alkyl group capable of having a substituent, an aromatic ring capable of having a substituent or a heterocyclic ring capable of having a substituent with the proviso that

20 at least one of A^{11} to A^{14} is a heterocyclic group capable of having a substituent.

21. An electrophotographic apparatus according to

25 Claim 20, wherein the exposure means comprises a semiconductor laser having an oscillation wavelength in a range of 380 - 500 nm.

22. An electrophotographic apparatus according to Claim 21, wherein the semiconductor laser has an oscillation wavelength in a range of 400 - 450 nm.

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